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U. S. DEPARTMENT OF AGRICULTURE,
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INCREASING PRODUCTION ON THE FARM.

SUGGESTIONS FOR TEACHERS IN SECONDARY SCHOOLS.¹

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INTRODUCTION.

It is generally agreed among educators and others who have the Nation's interests at heart that the schools of the country shall continue during the war with as little interruption as possible. At the same time it is felt that the schools shall do all they can to aid in meeting conditions which have grown out of the war. Inasmuch as some of the greatest problems are concerned with increasing the production of food and with conservation in its use, there is a special interest at this time in the teaching of agriculture and home economics. Now, as never before, the Nation is appreciating the value of these subjects in the school curriculum. With most educators it is no longer a question of why these subjects should be taught, but as to how they may be taught most effectively. Teachers of agriculture are requesting aid from this department in their efforts to meet emergency conditions. This document has been prepared with a view of assisting in meeting this demand.

READJUSTMENT OF AGRICULTURAL INSTRUCTION.

More practical instruction.—If agricultural instruction is to function in increased production the time of the students will be largely wasted if they are merely to study agriculture in books. At all times the majority of schools may profit by a great deal more attention to practical work, but at this time especially the farm should be used as a laboratory and the instruction of the school should center around farm practice. A special effort should be made by schools having farms or any land at their disposal not only to obtain from that land a maximum production, but also to obtain the greatest possible value in practice for students. All schools, and especially those not owning land, should put forth extra effort to link the work of the school with the work of the students on the home farm and with the best practice of the community.

Emphasis placed on production.—It is fortunate that so many schools have made a beginning upon the home-project plan, as the extension of this work is perhaps the best means the school has of increasing production. Although demonstration and improvement projects have value and fit in well with certain phases of the course of study, at this time projects which give quick returns in

¹ Prepared under the direction of C. H. Lane, Chief Specialist in Agricultural Education, States Relations Service.

production should have first consideration. Starting an orchard may fit in well with a course in horticulture and give the student excellent experience, but at this time such a project may very well give way to the care of a home garden or raising an acre of beans. Production projects with cash crops which give quick returns will appeal to the majority of students. Likewise, in connection with animal husbandry a student may get excellent training in developing colts, or caring for a work team, but at present a project in poultry or pork production will give more immediate returns in an increase of food. Young orchards should not be neglected and colts and horses need constant care, hence the student should be encouraged to do his part of the regular farm work in a better way by connecting it as far as possible with the work of the school, but at this time such projects should not take the place of those giving immediate returns. If the proper appeal is made to the students, they will put forth an extra effort and care for two acres instead of one, or carry a production project along with a project of a different nature. Special attention should be given the utilization of waste land and the intensive cultivation of lands not used to their full value. Around the cities, especially, there are many acres of land lying idle, the use of which may be obtained for students having no land for their home-project work. Land located near the school may be utilized by the whole school as a class project, the students getting good exercise in time which might otherwise be wasted.

Special attention to marketing.—In planning production, market needs and requirements must be kept in mind and due attention given to problems of marketing in connection with production. The school should see first of all that the students have aid in marketing the products they raise. In connection with their projects an appreciation of marketing problems may be developed. The projects of the students and the general work on the home farm will give opportunity for practice in the preparation of products for the market and furnish a basis around which to center general instruction in marketing.¹

Problems of food conservation.—Although most of the problems of food conservation are connected with consumption, many of them are linked with problems of production and should be considered in connection with agriculture. In the courses in animal husbandry emphasis should be placed upon the feeding of crops which are not suited for direct human consumption, the utilization of waste, and perishables which may not be marketed safely and with profit. In connection with perishable products intended for the market, care in handling should be stressed. Provisions should be made for the handling and marketing of such crops before they are ready to harvest. The importance of adequate and proper storage facilities should be emphasized. Methods of canning, drying, and other forms of preservation usually considered in connection with home economics may very well be considered also in connection with classes in agriculture as a means of marketing and caring for surplus. It is especially important that demonstrations and opportunities for practice be given to students who have the problem to meet on the home farm or in connection with their projects. Such work will involve mechanic arts in the making of drying and canning devices. It may very well be a matter of cooperation between classes in agriculture, mechanic arts, and home economics. Success at this time depends much upon cooperative effort. Why not set an example to the community and get the students into the spirit of cooperative effort and establish habits along that line by introducing more teamwork and group projects into their work at school?

¹ Detailed directions with regard to the teaching of marketing will be found in States Relations Service Document No. 72, Marketing Farm Products—Suggestions for Teachers in Secondary Schools.

Adapting work to community needs.—There is so much to be done in connection with increasing production and food conservation that there is a tendency for teachers to attempt too many lines of work. It will be far better to undertake something of a very definite nature and see it through to a successful culmination than to touch upon a number of subjects or to start a number of projects. The value of the work will depend largely upon how well it meets the immediate needs of the community. The instructor should make a survey of local conditions in order to be sure that he knows well the needs of the community. In some sections it will be largely a problem of utilizing waste land; in others a question of more good animals to make use of cheap forage and waste; in others storage and marketing problems will dominate.

In aiding the community with its problems the instructor should get in touch with all of the publications of this department, the agricultural college of the State in which the school is located, and the publications of all organizations intended to give help in this great emergency and make a selection of such as will apply to local conditions. Reference to department publications which should prove especially helpful at this time is given in connection with the projects suggested.

Review of food situation.—As soon as possible at the beginning of the school year an effort should be made to give the students a definite idea of the food situation. Copies of the food-control bill and the food-survey bill as they were passed by Congress should be considered carefully by the class. It may be possible to secure from the Department of Food Administration statements of the educational plans of that department. A reading of the President's letter to the Secretary of Agriculture, in which he urges food conservation, would not be out of place at this time. The local situation should be reviewed carefully and a definite program of action outlined for the school as a whole and for the classes in agriculture and home economics in particular.

ORGANIZATION OF STUDENTS.

An appeal for enlistment.—If the national situation with regard to the food supply and its importance at present is presented properly, it will pave the way for an appeal to the young men and women to enter the work of production and conservation with patriotic motives. It should not be difficult to make it clear that the success of the Nation at this time depends upon each one doing his part. The students should be made to feel that they are serving their country as well in using their time to help feed the Nation as they would in fighting at the front. A general patriotic program with emphasis upon the food situation will serve as an excellent means of getting the work started in the right spirit.

A food-production club.—The students having home projects should organize an agricultural club which may be given special designation as a food-production club at this time. The purpose of this club should be to afford opportunity for the students to socialize their study and efforts in food production at this time. Although the instructor may inspire its organization and indirectly supervise the work of this club, its direction should be left largely to the students. They will get out of it according to the effort they put into it. At meetings held weekly or less often reports of projects and community work may be given as well as papers or addresses by the students. Topics selected should be timely and bear directly or indirectly on their work. Debates will prove of interest. Speakers from State institutions and agricultural organizations should be invited in occasionally for illustrated lectures on topics of vital interest to club members.

Mobilization for farm labor.—In some of the rural schools and in all of the schools of village and city there will be numbers of students taking agricultural courses and otherwise interested in farming who do not live on farms and who have no opportunity for home projects. Inasmuch as there is a scarcity of farm labor during the summer months, an appeal should be made to such students to prepare themselves for service on the farm and offer their services to farmers in need of help. The experience of the last summer has shown that even the labor of untrained boys from the city may be helpful to farmers if it is given proper organization and supervision. The time of teachers of agriculture not taken in supervising productive projects of their students may be very well spent in organizing and directing camps of boys who have offered their services for farm labor. Although these organizations are handled in different ways in the various States, and have much the same motives and organization, much of the work is conducted according to such standard that the boys over 16 years are eligible to enlistment in the national organization known as the Boys' Working Reserve.

The United States Boys' Working Reserve is a national organization effected under the Department of Labor for the purpose of placing boys between the ages of 16 and 21 years of age, who would otherwise probably not be in productive labor, on the farms, and in essential industries. It was formed for the purpose of establishing a reservoir of labor ordinarily not available, from which the Nation might draw in the present crisis.

The reserve is nonmilitaristic, and a boy who enrolls can withdraw at any time on his own initiative or can be withdrawn by his parents.

At the time of enrollment a certificate is given, and at the end of a prescribed period of service on the farm or in a designated industry the boy is given a bronze badge bearing the words "Boys' Working Reserve, U. S. A." and the Great Seal of the United States. A boy to enroll must have his parents' consent, and also be in good physical condition. Each State has a State director to whom the boys can apply, or information can be obtained by writing to the State Council of Defense.

A letter addressed to William E. Hall, National Director of the United States Boys' Working Reserve, Washington, D. C., will also bring a reply.

President Wilson on August 21 said: "Let me express the hope that the young men of the country not now permanently employed may eagerly enter the Boys' Working Reserve to fit themselves by training and study for good citizenship and productive service. In this way they can show themselves worthy of patriotic fathers who have fought for democracy in the past, sustain their patriotic brothers who are fighting for it to-day, and command the affectionate pride of the brave mothers who are silently bearing the burdens at home."

Cooperative direction of work.—In many districts there will be other organized effort to direct young people in food production and conservation. Every effort should be made to bring such organizations together. Much more may be accomplished through cooperative effort. The work of the younger students especially will in many cases fit in well with the boys' and girls' club work, and the work of the older students may fit in with farmers' organizations. There should be no difficulty in having the student members of the production club at school and hold membership in outside organizations as well. Likewise, in any community work the agricultural instructor should work in harmony with the plans of the agricultural extension service of the State and any other State or local organization doing effective work in the community.

SUGGESTIVE LINES OF PRODUCTION.

The following suggestions relating to productive projects¹ are grouped according to courses as they are usually given in secondary schools. Although an effort has been made to give some pertinent suggestions which should prove helpful at the present time, no attempt has been made to outline the subjects as they should be taught or practiced.

FIELD CROPS.

Corn.—Growing 1 acre or more of field corn, sweet corn, or pop corn.

1. See that seed corn is selected in the field before danger of frost, properly cured, and stored safely.
2. Select varieties which are suited to the section and which will give the greatest possible returns.
3. Test all seed early in the spring.
4. Use cover crops where needed, and make full use of green manures.
5. Get barnyard manure on the land before its value is lost by leaching.
6. Prepare the land thoroughly by deep ploughing and subsequent harrowing.
7. Prevent weeds getting started, and conserve moisture by frequent shallow cultivation.

References.—The following Farmers' Bulletins: 537, How to Grow an Acre of Corn; 553, Pop Corn for the Market; 617, School Lessons on Corn. Also, Agricultural Education Monthly, Vol. II, No. 6, Teaching Corn Production in Secondary Schools.

Potatoes.—Growing one-half acre or more.

1. Arrange early for securing suitable seed.
2. Treat seed with formalin where there is danger of scab.
3. Avoid waste in cutting seed and planting.
4. Be sure the soil is adapted well to potatoes.
5. Prepare land by deep plowing and subsequent harrowing.
6. Use method of planting of most successful growers in district.
7. Prevent weeds and conserve moisture by frequent cultivations.
8. Prevent insects and disease by suitable sprays.
9. Secure best prices by taking care in digging and handling and by carefully cleaning and grading.
10. Provide suitable storage for surplus and next season's seed.
11. Select seed from best hills.

References.—The following Farmers' Bulletins: 386, The Potato on Irrigated Farms of the West; 407, The Potato as a Truck Crop; 533, Good Seed Potatoes and How to Produce Them. Also, Agricultural Education Monthly, Vol. II, No. 4, Potato Production—Suggestions for Teaching the Subject in Secondary Schools.

Beans, Peas, and Peanuts.—As there is a special need at this time for more human foods of high protein content, there is a special opportunity in growing such legumes as common beans, soy beans, and peanuts. There is also need of growing all kinds of field peas and beans with special care for seed production and of producing beans, peas, and peanuts for canning factories and oil mills in certain sections. Inasmuch as the cultural care will depend so much upon the section as well as the purpose for which grown, no suggestions are given.

References.—The following Farmers' Bulletins: 289, Beans; 318, Cowpeas; 372, Soy Beans; 431, The Peanut; 690, The Field Pea as a Forage Crop.

¹ For an explanation of the home-project plan for teaching agriculture, see Department Bulletin 346, Home Products in Secondary Courses in Agriculture.

ANIMAL HUSBANDRY.

Poultry Management.—Caring for a flock of hens, ducks, geese, or turkeys for the production of meat and eggs. The following suggestions pertaining to common fowls may be adapted to other poultry:

1. Secure strong, healthy, pure-bred breeding stock or eggs from such stock.
2. Be sure eggs for hatching are fresh and fertile and that they are handled carefully.
3. Hatch early for winter layers.
4. Do not waste feed on old hens and extra males. Fatten them for market.
5. Separate cockerels from pullets early. Do not allow male birds with laying flocks except when eggs are desired for hatching.
6. Gather eggs often, keep them clean, and grade them for market.
7. Candle all market eggs not known positively to be fresh.
8. Preserve surplus eggs in water glass for winter use.
9. Provide a variety of feed, with some form of green feed at all times.
10. Use kitchen scraps while fresh.
11. Provide clean water, grit, and shell-making material.
12. Avoid disease by providing dry, clean quarters, free from drafts.

References.—The following Farmers' Bulletins: 287, Poultry Management; 585, Natural and Artificial Incubation of Hens' Eggs; 624, Natural and Artificial Brooding of Chickens; 684, Squab Raising; 697, Duck Raising; 767, Goose Raising; 791, Turkey Raising. Also, Agricultural Education Monthly, Vol. II, No. 1, Squab Raising as a Subject of Instruction in Secondary Schools; Vol. II, No. 8, Poultry Management—Suggestions for Teaching the Subject in Secondary Schools. States Relations Service Document 57, Raising Ducks, Geese, and Turkeys—Suggestions for Teachers in Secondary Schools.

Pork Production.—Raising one or more pigs for market or as breeding stock.

1. Secure pigs of good feeding type. Consider breeding, especially if to be raised for breeding purposes.
2. Do not keep any sow for breeding which is not prolific.
3. By providing warm quarters and good feed secure two litters of pigs in one year. Pigs should have a dry bed and plenty of sunshine.
4. Begin feeding pigs as soon as they will eat. Keep up a continual growth.
5. Provide for forage crops and a permanent pasture.
6. Use all suitable waste from farm and kitchen.
7. Provide well-drained quarters and keep them clean.
8. Provide clean water for drinking and for bathing in hot weather.
9. Provide a mixture of charcoal, wood ashes, lime, sulphur, salt, and copperas to be before the pigs at all times.
10. In case of danger of cholera have pigs inoculated at once.

References.—The following Farmers' Bulletins: 205, Pig Management; 566, Boys' Pig Clubs; 765, Breeds of Swine. 874, Swine Management. Also, Agricultural Education Monthly, Vol. I, No. 6, Teaching Pork Production in Secondary Schools; Vol. II, No. 7, Teaching Swine Judging in Secondary Schools.

Calf Raising.—Feeding and management of a calf intended to be used for dairy production.

1. Secure calves bred for milk production as indicated by milk records of mothers.
2. To secure a strong calf the mother must be well nourished before calving.
3. Wean the calf within five days of birth, but feed on its mother's milk for the first few days. The calf must have the colostrum milk.
4. To prevent sickness be sure the milk is clean, warm, and fed regularly in clean pails.

5. Feed little and often, at least twice a day.
6. Change gradually from whole milk to separated milk. Change not more than a pound a day.
7. Supplement skim milk with grain and roughage as soon as the calf will eat them.
8. Consider milk substitutes for young calves carefully. Strong, vigorous calves may be weaned at six weeks to two months of age.
9. Always provide light, dry quarters, and keep them clean.
10. Have a lot for the calf in which it can get plenty of exercise.
11. Train the calf to lead and to be handled safely at an early age.

Milk Production.—Care and management of one or more cows.

1. Weigh the cow's milk at each milking and choose the best individuals as shown by record and Babcock test.

2. Feed liberally, but in proportion to milk production as shown by record.

A. Winter feeding—

(1) Feed all the hay or corn stover the cow will eat up clean.

(2) Feed $3\frac{1}{2}$ to 4 pounds silage for each 100 pounds of live weight or all that will be eaten up clean.

(3) In addition to above, feed 1 pound of grain to $3\frac{1}{2}$ or 4 pounds of milk.

B. Summer feeding—Pasture supplemented, if necessary, with soiling crops, silage, or grain.

3. Weigh all feed given and keep records.

4. Select feeds with a view to economy, bulk, variety, and physiological effect.

5. Provide succulence at all times in pasture, soiling crops, roots, and silage.

6. Provide plenty of clean, fresh water at all times. Warm water if below 40° F. in winter.

7. Salt should be available at all times.

8. Protect cows from cold rains and storms and keep them dry.

9. Provide shade in summer.

10. Provide for exercise at all seasons.

11. Be regular in feeding and milking.

12. Clean cow before milking by brushing well and wiping udder and flanks with damp cloth.

13. Use small-top milk pail to prevent dirt from getting into milk.

14. After milking remove milk from barn immediately, cool to 50° F. or below, and keep cool.

15. Rinse milk utensils with cold or lukewarm water, then wash in hot water, scrubbing with a brush and washing powder, and rinse with hot water. Sterilize, if possible, and leave to dry.

References.—The following Farmers' Bulletins: 602, Clean Milk: Production and Handling; 743, The Feeding of Dairy Cows; 777, Feeding and Management of Dairy Calves and Young Stock. Also, Agricultural Education Monthly, Vol. II, No. 5, Production of Clean Milk—Suggestions for Teaching the Subject in Secondary Schools.

Wool and Mutton Production.—Developing a flock of sheep on the farm:

1. Late summer or early fall is the most favorable time to make a start in sheep raising.

2. Grade ewes with a pure-bred ram will serve well for a beginning.

3. Secure young ewes of good type.

4. Boys have made a successful start with orphan lambs.

5. See that ewes are making good gains in weight at breeding time.

6. Sheep may be used to good advantage in cleaning up fall stubble fields and fence corners.

7. For winter feeding 3 to 3½ pounds of clover, alfalfa, or cowpeas, for ewes weighing less than 150 pounds, makes a good ration until near lambing time.

8. When the ewes are on dry feed, succulent feeds, such as silage and roots assist in keeping the ewes in health and are helpful in cutting down the feed bill.

9. Protect from dampness in winter.

10. Provide for exercise by scattering the feed over the field.

11. Keep records of breeding so that dates of lambing are known as the ewes require special care at this time.

12. Put each ewe about to lamb in a separate pen in a warm, dry place.

13. Take extra precautions in cold weather to prevent lambs from getting chilled at birth.

14. Watch young lambs for such troubles as constipation and sore eyes.

15. Dock all lambs at the age of 10 to 14 days.

16. Make provisions for shearing in late spring or early summer.

17. Dip on a warm, dry day about 10 days after shearing to free sheep from ticks, lice, and scab.

18. Discard all ewes which are not good breeders and heavy shearers.

19. Wean lambs when from three to five months of age.

20. Avoid stomach worms by rotation of crops and change of pasture. Use copper sulphate treatment if their symptoms appear.

21. Provide shade and fresh water in summer pastures.

22. Have lambs ready for market at three to five months of age.

23. Keep the lambs growing and gaining in weight from birth.

24. Investigate feeds and feeding practice and use methods adapted best to your local farm conditions.

25. Select best ewe lambs as breeders.

References.—The following Farmers' Bulletins: 576, Breeds of Sheep for the Farm; 652, The Sheep-killing Dog; 713, Sheep Scab; 810, Equipment for Farm Sheep Raising; 840, Farm Sheep Raising for Beginners.

Beef Production.—Raising one or more calves as baby beef.

1. Select a calf of beef type with capacity as a feeder.

2. In some sections a fall calf may prove the most successful.

3. See that the calf is properly dehorned and castrated.

4. Where blackleg is prevalent vaccinate as a means of prevention.

5. For the best results the calf should have whole milk from its mother.

6. At 4 to 6 weeks (as soon as the calf will eat) supplement milk with crushed grain.

7. Avoid loss of weight at weaning time by increasing the ration of grain and decreasing the supply of milk gradually—taking from 10 to 15 days.

8. Adapt system of feeding to season of birth and age of marketing. See tables in Farmers' Bulletin 811.

9. When not on pasture provide a succulent feed.

10. Do not try to finish the calves while on grass the whole time, they will not eat enough grain.

References.—The following Farmers' Bulletins: 588, Economical Cattle Feeding in the Corn Belt; 612, Breeds of Beef Cattle; 655, Cottonseed Meal for Feeding Beef Cattle; 811, Production of Baby Beef.

HORTICULTURE.

The Home Garden.—Planting and care of home vegetable garden for the purpose of supplying home needs, with sale of surplus.

1. Study books, bulletins, catalogues, and current publications, making plans early, providing for: (a) Good seed, (b) hotbeds and forcing devices with suitable soil and fertilizer, and (c) a map of proposed garden.

2. In the South consider the possibilities in fall and winter planting.

3. Consider the location with reference to: (a) Soil, (b) sunlight, (c) drainage and irrigation, (d) convenience in care and tillage, and (e) security from theft and damage by animals.

4. In considering the kind and amount of vegetables to plant keep in mind the following: (a) Tastes and requirements of family, (b) adaptability of climate and soil, (c) space and time available, (d) skill required in growing crop, and (e) market demands.

5. Do not plant an excess of perishables without providing first for their preservation or a market.

6. Plan for using all space by a succession of crops and suitable companion crops.

7. Provide for humus in an abundance of well-rotted manure.

8. Prepare the land well before planting by deep plowing or spading and thorough harrowing and raking.

9. Start long-season crops in hotbeds and cold frames.

10. Find out best local practice with regard to time of planting the various groups of plants.

11. Use flats and seed beds for starting such plants as celery and lettuce, which are benefited by transplanting.

12. Prevent weeds and conserve moisture by frequent shallow cultivation.

13. Become familiar with the most common insects and diseases of the garden in your locality and take proper measures of prevention.

14. Where there is any danger of drought consider all possibilities for irrigation.

15. Provide for storage and preservation of surplus.

16. Meet market standards and requirements in vegetables intended for sale.

17. Save seed from the best plants for next year.

18. Along with your record of cost and income keep notes which will be useful in planning and managing a garden next season.

Market Gardening.—Growing one or more crops especially for the market. Although there are great possibilities at this time for such projects, the extent and nature of the work will depend so much on local conditions that no attempt is made at giving timely suggestions.

References.—The following Farmers' Bulletins: 232, Okra: Its Culture and Uses; 254, Cucumbers; 255, The Home Vegetable Garden; 289, Beans; 324, Sweet Potatoes; 354, Onion Culture; 433, Cabbage; 460, Frames as a Factor in Truck Growing; 642, Tomato Growing in the South; 647, The Home Garden in the South; 818, The Small Vegetable Garden. Also, Agricultural Education Monthly, Vol. I, No. 9, The Home Vegetable Garden—Suggestions for Its Utilization in Secondary Agricultural Instruction.

Fruit Growing.—Projects in fruit growing may be grouped as follows: (a) Small fruits, and (b) orchard management. It will be most desirable at this time to have the students take hold of planting of small fruits and orchards which would otherwise be neglected. Through proper management beds of strawberries, grapes, blackberries, raspberries, and other bush fruits may be made to yield a profit and a great deal of waste prevented. Some of the most successful projects from both an agricultural and an educational point of view have been in orchard management. Students have taken hold of neglected and unprofitable orchards and through proper pruning, spraying, and careful picking and packing of the fruit have turned into a worthy asset what had been

a source of loss to the farm. It is especially desirable at this time that particular attention shall be given methods of handling and marketing the fruit, and that work in canning and drying shall be connected with the work in fruit production where there is not a ready market for the fresh fruit.

References.—The following Farmers' Bulletins: 154, The Home Fruit Garden; 181, Pruning; 291, Evaporation of Apples; 440, Spraying Peaches for the Control of Brown Rot, Scab, and Curculio; 482, The Pear and How to Grow It; 491, The Profitable Management of the Small Apple Orchard on the General Farm; 492, The More Important Insects and Fungus Enemies of the Fruit and Foliage of the Apple; 631, Growing Peaches: Sites, Propagation, Planting, Tillage, and Maintenance of Soil Fertility; 632, Growing Peaches: Pruning, Renewal of Tops, Thinning, Interplanted Crops and Special Practices; 633, Growing Peaches: Varieties and Classification; 643, Blackberry Culture; 650, The San Jose Scale and Its Control; 622, The Apple Tree Tent Caterpillar; 664, Strawberry Growing in the South; 709, Muscadine Grapes; 728, Dewberry Culture; 776, Growing Cherries East of the Rocky Mountains; 839, Home Canning by the One-Period Cold-Pack Method; 853, Home Canning of Fruits and Vegetables. Also articles in the Agricultural Education Monthly as follows: Vol. II, No. 2, Peach Growing as a Subject of Instruction in Secondary Schools; Vol. II, No. 4, Instruction in Strawberry Growing in Secondary Schools; Vol. II, No. 9, Blackberry and Dewberry Culture—Suggestions for Teaching the Subject in Secondary Schools.

CLASS PROJECTS AND COMMUNITY WORK.

Control of pests.—Appreciating the fact that increased production of food means a more determined battle against pests and disease, such work has been made a special feature of the Federal campaign. Much can be done by the schools in disseminating information and giving direct aid in this work. Schools owning a good spraying outfit have secured the following results: (a) Demonstrated the use of such apparatus and the value of particular kinds of spray and methods of spraying in the community; (b) given help in cases of emergency and special need; and (c) given students needed practice. In sections in the South schools have secured similar results in having a dipping tank available to the community for use in connection with its infested live stock.

Marketing farm products.—Many sections need definite aid in their marketing problems. While there is much that the school may do to help along this line, the following should prove suggestive:

(1) Packing and grading fruits and vegetables.—Students who become proficient in practical work of this nature should be sent out to instruct others where there is an actual need and desire for help. Demonstrations given at the school and on neighboring farms should be well advertised, so that all the community may profit from them. In urgent cases the class in horticulture should be excused from school work to go out for a time as a packing crew.

(2) Candling and grading eggs.—In South Carolina the rural school was used successfully as a community egg center and the students participated in the cleaning, candling, grading, and inspection of eggs. Such work developed a co-operative spirit, higher standards, better methods, and, consequently, better prices for the eggs of the community.

(3) Keeping in touch with market conditions.—The school may also serve the community well in acting as a center for market news and posting daily reports for the benefit of patrons. While much information may be received from the daily press of the market centers and from trade papers, the schools will find the market news service of this department of greatest value. Infor-

mation concerning this service may be obtained from the Bureau of Markets, United States Department of Agriculture, Washington, D. C.

(4) Conducting a local market.—Schools located in towns and villages have been very successful in stimulating a desire for a community market by having a cooperative market for the products of the boys' and girls' projects.

Work in food conservation.—High schools teaching agriculture and home economics should be the community center also for work in food conservation. At a number of the schools demonstrations in canning, drying, and the use of substitutes for wheat and other expensive foods are given for the benefit of patrons. A special course of 10 practical lessons on food conservation suitable for this purpose has been prepared by the Federal department of Food Administration. Copies of this course may be obtained from that department at Washington, D. C.

Emergencies will arise when the services of the school may be of particular value to the community. For example, in a Western peach-growing community a severe wind came up just as the bulk of the crop was ready to be picked. As the crop meant much to the community, school was dispensed with for a day or two, the boys and girls rendering very valuable service in helping to save hundreds of bushels of the fruit.

General community service.—Some schools may very well extend the service they are now rendering in testing seed and milk for farmers, as such work not only aids in eliminating waste and increasing production, but at the same time also gives good practice to the students.

There will be continual need for definite information as to the agriculture and agricultural production of rural districts. Progressive teachers of agriculture are continually making systematic efforts to secure data concerning local agriculture to use as a basis for instruction. In fact, the securing of this information by means of surveys in which the students participate is a vital part of the instruction given. The information secured in successive surveys should be properly recorded for the use of others as well as for subsequent use in the school. At this time the agricultural students may be of special value in making surveys of agricultural products, methods of production, and conservation of farm products for the use of the school and others who are aiding in the work.

ADMINISTRATIVE PROBLEMS.

Well-trained teachers needed.—The amount and nature of the service which schools may render now in increased food production will be limited chiefly by the capacity and training of the teacher of agriculture. Never before was there such need for men who have the ability to make their instruction practical. The kind of work suggested means that the teacher must not only know scientific agriculture, but that he must also know how to practice farming, and what is even more important, he must know boys and girls and have the ability to bring out the best that is in them.

Teachers to be employed throughout the year.—Most of the practical work in production comes in the summer. It is during the summer months when the boys and girls need most help. If the work of the teacher of agriculture is to count very much in increased production, he must be employed throughout the year with the understanding that the summer is to be his busy time, when his work will count for most in the actual training of farmers. Teachers who are impressed with the spirit of patriotic service at this time will be more willing than ever to put in overtime and put forth every effort to serve their country.

More and better supervision.—It is not only necessary to give more direction

and supervision to the boys and girls in their productive home work, but it is also necessary to make a greater effort to coordinate and direct the work of the teachers themselves. If State funds are given to the teaching of agriculture and the direction of the project work, provision should be made for the proper supervision of this work not only to be sure that the funds are spent as intended but also as a means of establishing high standards and aiding the weaker teachers in reaching them. As such supervision should mean more than inspection, the work should be given to men who have a wide vision, a patriotic desire to help the country in this crisis, and the ability to inspire others to service.

More attention to teacher-training.—It will be evident to those who are in charge of agricultural education that there is a dearth of men qualified to do this work. The present needs should emphasize the fact that we should not neglect the training of teachers of agriculture. There are such possibilities for aiding the Nation through instruction and practice in productive agriculture that a special appeal should be made to college students to avail themselves of all opportunity to prepare themselves as teachers and community leaders in this work.

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